

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of :  
J. KIM et al. :  
Serial No. Not yet assigned : Group Art Unit: Not yet assigned  
Filed: Concurrently Herewith : Examiner: Unknown  
For: PIEZOELECTRIC TRANSFORMER

**PRELIMINARY AMENDMENT**

Assistant Commissioner For Patents  
Washington, D.C. 20231

Dear Sir:

Preliminary to examination of the above-referenced application, please amend the application:

**IN THE CLAIMS:**

Please amend the following claims:

3. The piezoelectric transformer according to claim 1, wherein the first and second electrode portions of the output electrode has an electrode width of 0.5 mm or more.

4. The piezoelectric transformer according to claim 1, wherein positive voltage is applied to the input and ground electrodes, whereas negative voltage is applied to the first electrode portion of the output electrode, whereby the piezoelectric transformer is longitudinally polarized at an output section thereof.

5. The piezoelectric transformer according to claim 1, wherein the output electrode is connected to an external electrode at the center of the first electrode portion thereof.

6. The piezoelectric transformer according to claim 1, wherein each of the first and second electrode portions of the output electrode is adjusted in width to adjust output impedance exhibited at an output stage of the piezoelectric transformer when the output stage is coupled to a load.

7. The piezoelectric transformer according to claim 1, wherein the input, ground, and output electrodes are formed in accordance with a screen printing method.

8. A method for manufacturing a piezoelectric transformer as claimed in claim 1, comprising the steps of:

preparing a piezoelectric member having two opposite rectangular major surfaces as first and second surfaces, and four side surfaces connecting the first and second surfaces; forming an input electrode and a first electrode portion of an output electrode on the first surface of the piezoelectric member so that the input electrode and the first electrode portion are spaced apart from each other;

forming a ground electrode and a second electrode portion of the output electrode on the second surface of the piezoelectric member while allowing the ground electrode and the second electrode portion to be vertically symmetrical with the input electrode and the first electrode portion, respectively; and

printing a third electrode portion of the output electrode on the side surface of the

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piezoelectric member spaced away from the input and ground electrodes so that the third electrode portion connects the first and second electrode portion, whereby the first through third electrode portions connected together form the output electrode.

**REMARKS**

The above-referenced application is amended to delete the multiple dependencies of claims 3-8.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "Verified with markings to show changes made".

Respectfully submitted,  
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A BRIEF DESCRIPTION OF THE DRAWINGS

**VERIFIED WITH MARKINGS TO SHOW CHANGES MADE**

3. The piezoelectric transformer according to claim 1 [or 2], wherein the first and second electrode portions of the output electrode has an electrode width of 0.5 mm or more.

4. The piezoelectric transformer according to claim 1 [or 2], wherein positive voltage is applied to the input and ground electrodes, whereas negative voltage is applied to the first electrode portion of the output electrode, whereby the piezoelectric transformer is longitudinally polarized at an output section thereof.

5. The piezoelectric transformer according to claim 1 [or 2], wherein the output electrode is connected to an external electrode at the center of the first electrode portion thereof.

6. The piezoelectric transformer according to claim 1 [or 2], wherein each of the first and second electrode portions of the output electrode is adjusted in width to adjust output impedance exhibited at an output stage of the piezoelectric transformer when the output stage is coupled to a load.

7. The piezoelectric transformer according to claim 1 [or 2], wherein the input, ground, and output electrodes are formed in accordance with a screen printing method.

8. A method for manufacturing a piezoelectric transformer as claimed in claim 1 [or 2], comprising the steps of:

preparing a piezoelectric member having two opposite rectangular major surfaces as first and second surfaces, and four side surfaces connecting the first and second surfaces;

forming an input electrode and a first electrode portion of an output electrode on the first surface of the piezoelectric member so that the input electrode and the first electrode portion are spaced apart from each other;

forming a ground electrode and a second electrode portion of the output electrode on the second surface of the piezoelectric member while allowing the ground electrode and the second electrode portion to be vertically symmetrical with the input electrode and the first electrode portion, respectively; and

printing a third electrode portion of the output electrode on the side surface of the piezoelectric member spaced away from the input and ground electrodes so that the third electrode portion connects the first and second electrode portion, whereby the first through third electrode portions connected together form the output electrode.

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